IN THE CLAIMS

Claims 1-43: Canceled.

44. (Currently Amended) A method of forming a low dielectric constant material, comprising:

providing a first component that comprises a polymeric strand, wherein the polymeric strand comprises a polymer selected from the group consisting of a polyimide, a polyamide, a polyimide-amide;

providing a second component that comprises a molecule having a central portion that comprises a silicon atom and with at least three arms extending from the central portion, wherein each of the arms includes a backbone having a reactive group; and

forming a polymeric network from at least the first component and the second component, wherein the first component and the second component form the polymeric network in a reaction involving at least one of the reactive groups when the first and second components are thermally activated.

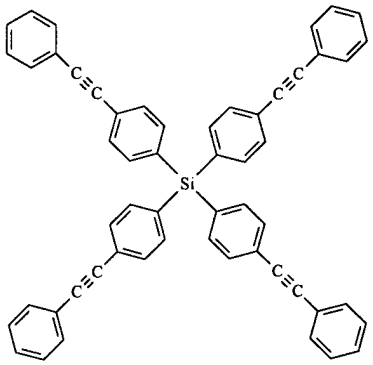
Claims 45-47: Canceled.

48. (Previously Presented) The method of claim 44, wherein at least one of the three arms of the molecule comprises an aromatic ring.

49. (Previously Presented) The method of claim 48, wherein the at least one of the three arms further comprises an ethynyl group.

50. (Previously Presented) The method of claim 49, wherein the at least one of the three arms comprises a chemical group selected from the group consisting of a 4-ethynylphenyl, a tolanyl, a 4-phenylethynylbiphenyl, and a bistolanyl.

51. (Previously Presented) The method of claim 44, wherein the molecule has a structure selected from the group consisting of:



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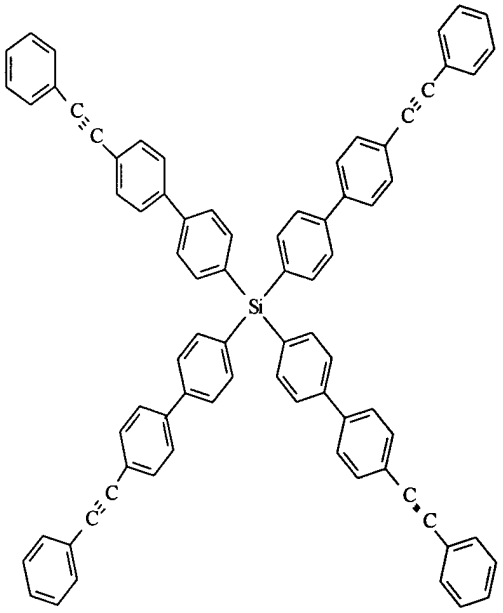

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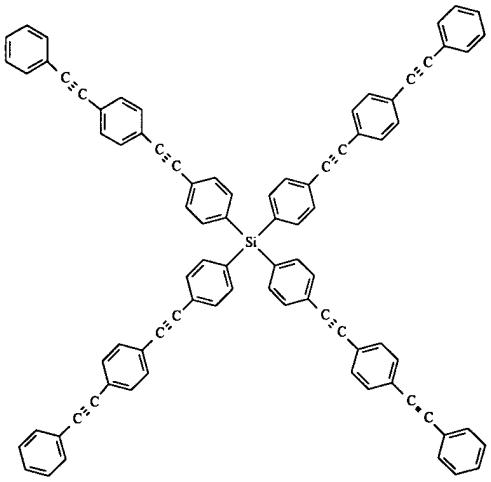

52. (Previously Presented) The method of claim 44, wherein the reactive group is a triple bond.

53. (Previously Presented) The method of claim 44, wherein the polymeric network is a semi-interpenetrating network.

54. (Previously Presented) The method of claim 44, wherein the reaction comprises a cyclo-addition reaction.

55. (Previously Presented) The method of claim 44, wherein the reaction takes place without an additional crosslinking molecule.

56. (Previously Presented) The method of claim 44, wherein the thermal activation comprises heating the first and second components to a temperature of at least 200°C.

57. (Previously Presented) The method of claim 44, wherein the low dielectric constant material has a dielectric constant of less than 2.4.

58. (Previously Presented) The method of claim 44, wherein the low dielectric constant material has a dielectric constant of less than 2.7.

59. (Previously Presented) The method of claim 44, wherein the material has a glass transition temperature higher than 400°C.

60. (Previously Presented) The method of claim 44, wherein the material has a glass transition temperature higher than 450°C.